

AMENDMENTS TO THE CLAIMS:

This listing of the claims below will replace all prior versions and listing of claims in this application.

Listing of Claims

22. (New) A genetically modified dicotyledonous plant cell comprising
- (1) a first foreign nucleic acid molecule, wherein said first foreign nucleic acid molecule is
 - (a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 3;
 - (b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 3; or
 - (c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA molecule that reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 3;
 - (2) a second foreign nucleic acid molecule, wherein said second foreign nucleic acid molecule is
 - (a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEI protein comprising at least 95% identity to the amino acid sequence of SEQ ID NO: 5;
 - (b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a BEI protein comprising at least 95% identity to the amino acid sequence of SEQ ID NO: 5; or
 - (c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA molecule that reduces the expression of at least one endogenous gene encoding a BEI protein comprising at least 95% identity to the amino acid sequence of SEQ ID NO: 5; and
 - (3) a third foreign nucleic acid molecule, wherein said third foreign nucleic acid molecule is
 - (a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 7;

(b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a BEII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 7; or

(c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA molecule that reduces the expression of at least one endogenous gene encoding a BEII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 7; and

wherein said plant cell synthesizes a modified starch having an amylose content of at least 30%, an increased phosphate content in comparison with starch from a corresponding wild-type plant cell, and an increased end viscosity in comparison with starch from a corresponding wild-type plant cell.

23. (New) The plant cell of claim 22, wherein said modified starch has an increased gel strength in comparison with starch from a corresponding wild-type plant cell.
24. (New) The plant cell of claim 23, wherein said modified starch, which after gelatinization of a 6% suspension in water forms a gel with a gel strength that is increased by at least 300% in comparison with the gel strength of starch extracted from a corresponding wild-type plant cell.
25. (New) A plant comprising the plant cell according to claim 22.
26. (New) The plant according to claim 25, wherein said plant is a starch-storing plant.
27. (New) The plant according to claim 26, wherein said plant is a potato plant.
28. (New) Propagation material of the plant according to claim 25, wherein said propagation material comprises said first, second, and third foreign nucleic acid molecules.
29. (New) The plant cell of claim 22, wherein

said first foreign nucleic acid molecule is a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 3;

said second foreign nucleic acid molecule is a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEI protein comprising at least 95% identity to the amino acid sequence of SEQ ID NO: 5; and

said third foreign nucleic acid molecule is a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 7.

30. (New) The plant cell of claim 22, wherein

(1) said first foreign nucleic acid molecule is

(a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising the amino acid sequence of SEQ ID NO: 3;

(b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising the amino acid sequence of SEQ ID NO: 3; or

(c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA molecule that reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising the amino acid sequence of SEQ ID NO: 3;

(2) a second foreign nucleic acid molecule, wherein said second foreign nucleic acid molecule is

(a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEI protein comprising the amino acid sequence of SEQ ID NO: 5;

(b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a BEI protein comprising the amino acid sequence of SEQ ID NO: 5; or

(c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA

molecule that reduces the expression of at least one endogenous gene encoding a BEI protein comprising the amino acid sequence of SEQ ID NO: 5; and

- (3) a third foreign nucleic acid molecule, wherein said third foreign nucleic acid molecule is
- (a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEII protein comprising the amino acid sequence of SEQ ID NO: 7;
 - (b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a BEII protein comprising the amino acid sequence of SEQ ID NO: 7; or
 - (c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA molecule that reduces the expression of at least one endogenous gene encoding a BEII protein comprising the amino acid sequence of SEQ ID NO: 7.

31. (New) The plant cell of claim 30, wherein

said first foreign nucleic acid molecule is a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising the amino acid sequence of SEQ ID NO: 3;

said second foreign nucleic acid molecule is a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEI protein comprising the amino acid sequence of SEQ ID NO: 5; and

said third foreign nucleic acid molecule is a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEII protein comprising the amino acid sequence of SEQ ID NO: 7.

32. (New) A method for generating a genetically modified dicotyledonous plant, comprising

- a) introducing into a plant cell a first, second, and third foreign nucleic acid molecule;
- b) regenerating a plant from, or using, said cell generated in accordance with a); and
- c) optionally generating further plants from said plants generated in accordance with step b),

wherein

- (1) said first foreign nucleic acid molecule is

- (a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 3;
 - (b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 3; or
 - (c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA molecule that reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 3;
- (2) said second foreign nucleic acid molecule is
- (a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEI protein comprising at least 95% identity to the amino acid sequence of SEQ ID NO: 5;
 - (b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a BEI protein comprising at least 95% identity to the amino acid sequence of SEQ ID NO: 5; or
 - (c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA molecule that reduces the expression of at least one endogenous gene encoding a BEI protein comprising at least 95% identity to the amino acid sequence of SEQ ID NO: 5; and
- (3) said third foreign nucleic acid molecule is
- (a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 7;
 - (b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a BEII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 7; or
 - (c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA molecule that reduces the expression of at least one endogenous gene encoding a BEII

protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 7;
and

wherein said plant cell synthesizes a modified starch having an amylose content of at least 30%, an increased phosphate content in comparison with starch from a corresponding wild-type plant cell, and an increased end viscosity in comparison with starch from a corresponding wild-type plant cell.

33. (New) The method of claim 32, wherein said modified starch has an increased gel strength in comparison with starch from a corresponding wild-type plant cell
34. (New) The method of claim 32, wherein said modified starch, which after gelatinization of a 6% suspension in water forms a gel with a gel strength that is increased by at least 300% in comparison with the gel strength of starch extracted from a corresponding wild-type plant cell.
35. (New) The plant obtainable by the method of claim 32, wherein said plant is a starch-storing plant.
36. (New) Propagation material of the plant of claim 35, wherein said propagation material comprises said first, second, and third foreign nucleic acid molecules.
37. (New) A method for generating a genetically modified dicotyledonous plant cell comprising introducing into a dicotyledonous plant cell a first, second, and third foreign nucleic acid molecule, wherein
 - (1) said first foreign nucleic acid molecule is
 - (a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 3;
 - (b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 3; or
 - (c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA

molecule that reduces the expression of at least one endogenous gene encoding a binding domain of a SSIII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 3;

(2) said second foreign nucleic acid molecule is

(a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEI protein comprising at least 95% identity to the amino acid sequence of SEQ ID NO: 5;

(b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a BEI protein comprising at least 95% identity to the amino acid sequence of SEQ ID NO: 5; or

(c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA molecule that reduces the expression of at least one endogenous gene encoding a BEI protein comprising at least 95% identity to the amino acid sequence of SEQ ID NO: 5; and

(3) said third foreign nucleic acid molecule is

(a) a DNA molecule encoding at least one antisense RNA that reduces the expression of at least one endogenous gene encoding a BEII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 7;

(b) a DNA molecule which, via a co-suppression effect, reduces the expression of at least one endogenous gene encoding a BEII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 7; or

(c) a DNA molecule that simultaneously encodes at least one antisense RNA and at least one sense RNA, where said antisense RNA and said sense RNA form a double-stranded RNA molecule that reduces the expression of at least one endogenous gene encoding a BEII protein comprising at least 95% identity with the amino acid sequence of SEQ ID NO: 7; and

wherein said plant cell synthesizes a modified starch having an amylose content of at least 30%, an increased phosphate content in comparison with starch from a corresponding wild-type plant cell, and an increased end viscosity in comparison with starch from a corresponding wild-type plant cell.

38. (New) The method of claim 37, wherein said modified starch has an increased gel strength in comparison with starch from a corresponding wild-type plant cell
39. (New) The method of claim 38, wherein said modified starch, which after gelatinization of a 6% suspension in water forms a gel with a gel strength that is increased by at least 300% in comparison with the gel strength of starch extracted from a corresponding wild-type plant cell.
40. (New) A method for modifying the starch of a plant, comprising generating the plant according to claim 25, and obtaining starch from said plant or starch-containing parts thereof.
41. (New) A method for modifying the starch of a plant, comprising generating the plant according to claim 35, and obtaining starch from said plant or starch-containing parts thereof.